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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,892	09/29/2003	Mohammad Hossein Zarrabizadeh	22	1989
22046 7590 05/12/2009 Docket Administrator - Room 2F-192 Alcatel-Lucent USA Inc. 600-700 Mountain Avenue Murray Hill, NJ 07974			EXAMINER LEE, JOHN W	
			ART UNIT 2624	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/673,892

**Applicant(s)**ZARRABIAZADEH, MOHAMMAD  
HOSSEIN**Examiner**

JOHN Wahnkyo LEE

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 38-52, 55, 56 and 58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37, 53, 54 and 57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20050214 and 20050328
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. No claim is generic to the following disclosed patentably distinct species:
  - I. Species corresponding to FIG. 1 and FIG. 6
  - II. Species corresponding to FIG. 2 and FIG. 6
  - III. Species corresponding to FIG. 9 and FIG. 6
  - IV. Species corresponding to FIG. 10 and FIG. 6
  - V. Species corresponding to FIG. 1 and FIG. 8
  - VI. Species corresponding to FIG. 2 and FIG. 8
  - VII. Species corresponding to FIG. 9 and FIG. 8
  - VIII. Species corresponding to FIG. 10 and FIG. 8

The species are independent or distinct because the applicant discloses different embodiments for implementing the invention. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations

of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

2. Applicant's election with traverse of Species I, which corresponds to claims 1-37, 53-54 and 57, in the reply filed on 15 January 2009 is acknowledged.

***Information Disclosure Statement***

3. Initialed and dated copies of Applicant's IDS form 1449, Paper No. 20050214 and 20050328 are attached to the instant Office action.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

6. Claim 54 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 54 recites a software which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per

se. Non-functional descriptive is non-statutory regardless of whether it is claimed as residing on a computer readable medium.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-9, 11, 13-18, 20-32, 34-37, 53-54 and 57 are rejected under 35 U.S.C. 102(e) as being anticipated by Reed et al. (US 6,590,996 B1).

Regarding claim 1, Reed discloses a method of watermarking (col.3, line 57, "watermark") a video signal (col. 4, lines 10-20, "host signal ... video") including additional information (col. 3, line 57, "information signal") therein, said video signal (col. 4, lines 10-20, "host signal ... video") being characterized in that at least a portion of said additional information (col. 15, lines 22, "two watermark component") has been impressed (col. 15, lines 22, "insert") upon a chrominance portion (col. 15, line 31, "color plane ... chrominance plane") of said video signal (col. 4, lines 10-20, "host signal ... video") by placing it in at least one selected bit position of a value (col. 15, line 34, "bit") derived from an average of said chrominance portion (col. 15, line 31, "color plane ... chrominance plane") over a block (col. 2, lines 50-51, "average color of the block") of said video signal (col. 4, lines 10-20, "host signal ... video").

Regarding claim 2, Reed discloses wherein said portion of said additional information being a bit (col. 15, line 34, "bit").

Regarding claim 3, Reed discloses wherein said additional information replacing at least one bit of said value(col. 15, line 34, "bit") derived from said average of said chrominance (col. 15, line 31, "color plane ... chrominance plane") portion over said block (col. 2, lines 50-51, "average color of the block").

Regarding claim 4, Reed discloses wherein said value derived from an average of said chrominance portion over a block of said video signal being the average of the values of said chrominance portion for each pixel of said block (Fig. 7; col. 14, lines 41-49, "... pixel blocks").

Regarding claim 5, Reed wherein said additional information being not substantially perceivable by the human visual system (col. 34, lines 1-2, "substantially imperceptible to human visual perception") when said video signal including said additional information is displayed on a display device (Fig. 20-1247; col. 33, line 20, "monitor").

Regarding claim 6, Reed discloses wherein said additional information being impressed by changing the value of said chrominance portion of various pixels of said block, and wherein the magnitude of the change in value any pixel is a function of the amount of change that can be introduced into said pixel without resulting (Fig. 14-958; col. 23, lines 46-67, "... magnitude ...") in an artifact that is substantially detectable by the human visual system (col. 34, lines 1-2, "substantially imperceptible to human visual perception").

Regarding claim 7, Reed discloses wherein said additional information being impressed by changing the value of said chrominance portion of various pixels of said

block, and wherein the magnitude of the change in value any pixel does not exceed the amount of change (Fig. 14-958; col. 23, lines 46-67, "... magnitude ...") that can be introduced into said pixel without resulting in an artifact that is substantially detectable by the human visual system (col. 34, lines 1-2, "substantially imperceptible to human visual perception").

Regarding claim 8, Reed discloses wherein the position of said selected bit (col. 15, line 34, "bit") being fixed for at least one block of at least one frame of (col. 2, lines 50-51, "average color of the block") said video signal (col. 4, lines 10-20, "host signal ... video").

Regarding claim 9, Reed discloses wherein the position of said selected bit being dynamically determined (col. 15, line 34, "can range from a single bit") for at least one block of at least one frame of (col. 2, lines 50-51, "average color of the block") said video signal (col. 4, lines 10-20, "host signal ... video").

Regarding claim 11, Reed discloses wherein said bit position into which said additional information is impressed is a bit of the integer portion of said value derived from said average (col. 23, lines 60-61, "the final results is an array of samples, each having one of five values: {-2,-1,0,1,2}).

Regarding claim 13, Reed discloses wherein said average of said chrominance portion over said block of said video signal is a DC coefficient of said block in a frequency domain representation of said block of said video signal (col. 38, lines 24-25, "DC component of the color for that block").

Regarding claim 14, Reed discloses wherein said additional information was placed in said at least one selected bit position in a manner that makes a minimum change to said average (col. 36, lines 65-67, "... minimized ...").

Regarding claim 15, Reed discloses wherein said additional information being placed in said at least one selected bit position by adding a value to said average so as to make the value of said at least one bit position of said value derived from said average the same as said additional information to be impressed (col. 26, lines 10-17, "... add the detection value ...").

Regarding claim 16, Reed discloses wherein said additional information being placed in said at least one selected bit position by adding a value to said average so as to make said at least one bit position the same in said value derived from said average as said additional information to be impressed while making only a minimum change to the value of said average when impressing said data (col. 26, lines 10-17, "... add the detection value ...").

Regarding claim 17, Reed discloses wherein said additional information being placed in said at least one selected bit position by adding a value to said average so as to make said at least one bit position of said value derived from said average the same in value as said additional information to be impressed, said adding to said average having been achieved by adding an amount to the said chrominance portion of various pixels of said block, said additions to said pixel chrominance portions being made until a total of such additions equals the product of said value and the number of pixels in a

block, said additions being independent of any other changes made to the chrominance portion of said pixels (col. 26, lines 10-17, "... add the detection value ...").

Regarding claim 18, Reed discloses wherein said video signal further comprising a margin signal added thereto to reduce the likelihood that said additional information will be eliminated should said video signal undergo quantization (col. 6, lines 61-67; col. 7, lines 1-19, "... quantization ...").

Regarding claim 20, Reed discloses wherein said additional information being placed in said at least one selected bit position by adding only a minimum necessary amount to said average so that in said value derived from said average said at least one bit position is made to have the same value as said additional information to be impressed and said value derived from said average is within a safe range (col. 26, lines 10-17, "... add the detection value ...").

Regarding claim 21, Reed discloses wherein said additional information being interleaved within said video signal with respect to its ordering prior to undergoing a process to be impressed therein (col. 20, lines 1-13, "... preprocessing ...").

Regarding claim 22, Reed discloses wherein said additional information being channel encoded within said video signal (col. 3, lines 57-60, "an information signal that is embedded in a host signal ...").

Regarding claim 23, Reed discloses an apparatus for embedding additional watermarking data within a video signal, comprising: a color selection unit for selecting a chrominance portion (col. 15, line 31, "selected color plane ... chrominance plane") of a block (col. 2, lines 50-51, "average color of the block") of said video signal (col. 4,

lines 10-20, "host signal ... video") to carry a portion of said additional watermarking data (col. 15, lines 22, "two watermark component"); and a data adder that adds information (col. 3, line 57, "information signal") to pixels of said block (col. 2, lines 50-51, "average color of the block") of said video signal (col. 4, lines 10-20, "host signal ... video") thereby causing a change in the average value (col. 17, line 60, "average of samples") of said selected chrominance portion (col. 15, line 31, "selected color plane ... chrominance plane") so as to incorporate at least a portion of said additional watermarking data (col. 15, lines 22, "two watermark component") within said changed average value (col. 17, line 60, "average of samples").

Regarding claim 24, Reed discloses wherein said color selection unit comprises a prestored table in computer readable form that indicates for each area within at least a colorspace portion which chrominance portion should be selected for pixels within said each area (col. 34, line 52, "lookup table").

Regarding claim 25, Reed discloses further comprising a block interleaver that interleaves said additional watermarking data prior to said additional watermarking data being incorporated within said changed average value (col. 20, lines 1-13, "... preprocessing ...").

Regarding claim 26, Reed discloses further comprising a channel encoder that channel encodes said additional watermarking data prior to said additional watermarking data being incorporated within said changed average value (col. 20, lines 1-13, "... preprocessing ...").

Regarding claim 27, Reed discloses wherein said data adder modifies only a said selected chrominance portion of said pixels and further comprising a multiplexer for multiplexing at least the unmodified chrominance portion of said pixels and said modified chrominance portion of said pixels (Fig. 2-224, "combine").

Regarding claim 28, Reed discloses wherein said data adder further comprises a bit mapper (col. 9 lines 13-25, "... map ...").

Regarding claim 29, Reed discloses wherein said data adder further comprises a texture masking unit that determines a amount of change in said chrominance portion that a pixel can endure while minimizing the likelihood of a visible artifact resulting, and wherein said data adder adds no more than said amount to said pixel (col. 11, lines 17-34, "... mask ...").

Regarding claim 30, Reed discloses wherein said data adder adds a further value to pixels of said block of said video signal thereby causing the resulting new average value to be within a safe range (col. 15, line 34, "can range from a single bit").

Regarding claim 31, Reed discloses wherein said data adder changes said average value by the least amount necessary to carry said additional watermark data (col. 15, lines 22, "two watermark component").

Regarding claim 32, Reed discloses wherein said data adder adds a further value to pixels of said block of said video signal thereby causing the resulting new average value to be within a safe range (col. 15, line 34, "can range from a single bit") and wherein said data adder further adds to pixels of said block the value that changes said average value by the least amount possible (col. 17, line 60, "average of samples").

Regarding claim 34, claim 34 is analogous and corresponds to claim 23. See rejection of claim 23 for further explanation.

Regarding claim 35, claim 35 is analogous and corresponds to claim 15. See rejection of claim 15 for further explanation.

Regarding claim 36, claim 36 is analogous and corresponds to claim 15. See rejection of claim 15 for further explanation.

Regarding claim 37, claim 37 is analogous and corresponds to claim 17. See rejection of claim 17 for further explanation.

Regarding claim 53, claim 53 is analogous and corresponds to claim 23. See rejection of claim 23 for further explanation.

Regarding claim 54, claim 54 is analogous and corresponds to claim 23. See rejection of claim 23 for further explanation.

Regarding claim 57, Reed discloses an apparatus for embedding watermarking data within a video signal, comprising: means for receiving a video signal (col. 4, lines 10-20, "host signal ... video") in a frequency domain based format (col.9 lines 37-52, "frequency domain"); and means for changing a DC coefficient of at least one block (col. 38, line 25, "DC component of the color for that block") of said video signal(col. 4, lines 10-20, "host signal ... video") to carry at least a portion of said watermarking data (col. 15, lines 22, "two watermark component").

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (US 6,590,996 B1) in view of Baudry et al. (US 2004/0001626 A1).

Regarding claim 10, Reed discloses all the claim limitations except the one specified in claim 10. However, Baudry discloses wherein the position of said selected bit is determined based on a texture variance of said block (paragraph [0083], "texture").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Baudry's invention in Reed's invention to reduce or correct the distortions as suggested by Baudry (paragraph [0003]).

11. Claim 12, 19 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (US 6,590,996 B1) in view of Doerr et al. ("A guide tour of video watermarking").

Regarding claim 12, Reed discloses all the previous claim limitations except the one specified in claim 12. However, Doerr discloses wherein said block of said video signal is in a reduced resolution format such that for each 2.times.2 luminance block of an original version of said video signal, had said original version of said video signal been in 4-4-4 representation, there remains only one Y, one U, and one V value (section 3.1; page 271, "4:4:4").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Doerr's method in Reed's invention to provide great help for digital video watermarking as suggested by Doerr (conclusion).

Regarding claim 19, Doerr further discloses wherein said video signal further comprising a margin signal added thereto to reduce the likelihood that said additional information will be eliminated should said video signal undergo motion picture experts group (MPEG)-type encoding (section 3.1; page 271, "mpeg").

Regarding claim 33, claim 33 is analogous and corresponds to claim 12. See rejection of claim 12 for further explanation.

### ***Conclusion***

12. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN Wahnkyo LEE whose telephone number is (571)272-9554. The examiner can normally be reached on Monday - Friday (Alt.) 7:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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/John Wahnkyo Lee/  
Examiner, Art Unit 2624

/Samir A. Ahmed/  
Supervisory Patent Examiner, Art Unit 2624